

REMARKS/ARGUMENTS

Claims 1 – 4 and 6 – 15 are pending in the application.

Claim 5 is canceled by this Amendment, and its features are incorporated into claim 1.

Claims 1, 3, 4, 10 and 11 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,966,983 to McWhirter, et al. (hereinafter, “McWhirter”). In addition, claims 5 – 7 are rejected under 35 U.S.C. §103(a) as obvious over McWhirter.

McWhirter is cited at col. 5, lines 37+ and Figure 2 which refer to prior art constructions of so-called “Air ATAD” (autothermal aerobic digestion systems). Prior art ATAD devices are operated in batch mode (col. 5, lines 44 – 45), and they are not operated in a continuous flow manner (col. 5, lines 46 – 47). As described, a typical manner of operation is to remove digested solids from the second tank followed by a transfer of sludge from the first to the second tank and addition of raw sludge to the first tank. This clearly discloses that the first and second tanks are receiving material at the same time. Because the second tank is used for disinfection, no new material can be fed for about 20 hours. Both tanks are fed at time intervals of 20 hours or more; i.e., feeding of the first tank is neither “continuously” nor “quasi-continuously.”

In contrast, claim 1 of the present disclosure provides that raw sludge is fed continuously or quasi-continuously into a first stage (the first tank) and batch wise in a second

stage (second tank). Claim 1 also provides that “the time between two chargings of the first stage is not longer than 12 hours,” which further distinguishes over McWhirter. The present invention avoids the drawbacks of the prior art, wherein high variations of the conditions in stage 1 (tank 1) produce odor emissions, (see application at p. 1, line 21 to page 2, line 2).

For these reasons, McWhirter fails to disclose the features of claim 1. Applicants respectfully request reconsideration and withdrawal of the §102(b) rejection to claim 1.

For at least the same reasons as in claim 1, McWhirter fails to disclose dependent claims 3, 4, 10 and 11. Applicants also request reconsideration and withdrawal of the §102(b) rejections to claims 3, 4, 10 and 11.

Dependent claim 5 is canceled by this Amendment, mooted the §103(a) rejection over McWhirter.

Dependent claims 6 and 7 provide the process of claim 1, wherein “the time between two chargings of the first stage is not longer than 6 hours,” and “no charging is effected for at least four hours,” respectively.

The Office Action suggests that it would have been obvious to optimize the duration of each stage to ensure adequate killing of pathogenic organisms. However, this argument overlooks the important difference between the present disclosure and the cited art. In the

cited art, first and second stages are fed at the same interval; for example, every 24 hours, material is withdrawn from the second tank, material is transferred from the first tank to the third tank, and raw sludge is fed into the first tank.

This is not the case for the present disclosure, where material is withdrawn from the second stage in a batch wise manner (depending on the temperature) at time intervals of about 20 to 24 hours. Feeding of the first stage is conducted continuously or quasi-continuously; for example every one hour, every three hours or every six hours, and the like. Thus, the present disclosure is not an optimization, but rather it is a different way of operation.

Claim 8 is rejected under 35 U.S.C. §103(a) as obvious over McWhirter in view of U.S. Patent No. 4,846,965 to Clifft, et al. (hereinafter "Clifft").

Claim 8 provides the process of claim 1 wherein the amount of oxygen supplied in the first or second stage is controlled depending on parameters selected from: charged amount of raw sludge; redox potential in the sludge; oxygen content in the sludge; oxygen content in the exhaust gas; and CO₂ content in the exhaust gas.

Clifft discloses a method for aerobic wastewater treatment that controls oxygen dissolution and reduces oxygen losses in the effluent dissolved oxygen (DO). However, Clifft fails to supplement the deficiency of the primary reference described above, and so the combination of Clifft and McWhirter does not disclose or even suggest all of the features in

claim 8. Therefore, Applicants request reconsideration and withdrawal of the §103(a) rejection to claim 8.

Claim 9 is rejected under 35 U.S.C. §103(a) as obvious over McWhirter in view of U.S. Patent No. 6,966,983 to Stover (hereinafter “Stover”).

Claim 9 provides the process of claim 1, wherein the temperature in the second stage is within a range of from 50 to 65 °C and is controlled by supplying or withdrawing heat.

Stover discloses a process for aerobic thermophilic biological treatment of wastes by monitoring specific parameters to optimize the control process. Stover is cited in the Office Action for teaching a supplemental heating system to heat the influent flow or recycle line 18 in the event that heating requirements of the aerobic thermophilic reaction are not satisfied by the fuel value content or temperature of the raw waste to be treated. However, Stover completely fails to supplement the deficiency above of the primary cited reference, and so the combination of Stover and McWhirter fails to disclose or even suggest claim 9. Accordingly, Applicants request reconsideration and withdrawal of the §103(a) rejection to claim 9.

Claims 12 – 15 are rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent Application Publication No. 2002/0079266 to Ainsworth, et al. (hereinafter, “Ainsworth”). Claims 12 – 15 are also rejected under 35 U.S.C. §112, 2nd paragraph, as indefinite concerning the terms “raw sludge tank” and “disinfection tank.”

Claims 12 – 15 are amended in this Amendment to depend from the process provided in claim 1.

Ainsworth discloses a system for converting cellulose-containing feedstock using an anaerobic digester system into a discharge gas (such as methane) and an enriched effluent. However, Ainsworth fails to disclose a process for stabilization and disinfection of sludge. The Office Action incorrectly equates Ainsworth's tank 20, which is a feedstock slurry tank, with the "raw sludge tank for the continuous or quasi-continuous charging of raw sludge, which is a first stage" of the present disclosure, by stating that claim 12 did not require the raw sludge tank to contain raw sludge. However, the amendment to claim 12 clarifies that "raw sludge...is fed continuously or quasi-continuously into a first stage..."; i.e., Ainsworth's tank 20 neither discloses nor suggests the raw sludge tank in claim 12. Likewise, Ainsworth's tank 9 (cited in the Office Action) is clearly different than the "disinfection tank" in claim 12. Accordingly, Applicants submit that Ainsworth does not anticipate the features in claim 12, and respectfully request reconsideration and withdrawal of the §102(b) rejection made thereto.

In addition, Ainsworth fails to anticipate dependent claims 13 – 15, for at least the same reasons as provided for claim 12.

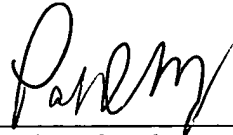
For the above reasons, Applicants respectfully request reconsideration and withdrawal of the §102(b) rejections to claims 12 – 15 over Ainsworth.

Moreover, the amendment to claim 12 (to depend from claim 1) obviates the §112, 2nd paragraph rejections to dependent claims 12 – 15. The elements “raw sludge tank” and “disinfection tank” in claims 12 – 15 are clarified as dependent from claim 1, which provides that “raw sludge...is fed continuously or quasi-continuously into a first stage,” and that “partially stabilized sludge is fed into a second stage in which disinfection of the partially stabilized sludge is effected...” In addition the Office Action states that claim 14 is unclear as to the number of disinfection tanks; however, claim 14 clearly provides a process comprising “at least two disinfection tanks.” For these reasons, Applicants respectfully request reconsideration and withdrawal of the §112, 2nd paragraph rejections to claims 12 – 15.

In view of the above, Applicants state that claims 1 – 4 and 6 – 15 are neither anticipated nor obvious over the cited art, and are in condition for allowance. Applicants respectfully request issuance of a Notice of Allowability for claims 1 – 4 and 6 – 15.

Respectfully submitted,

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